



INSTRUCTIONS

-J01350

REV 11-7-00

Kit Number 87166-99

TLE/TLE-ULTRA SIDECAR ATTACHMENT KIT

General

This instruction sheet covers installation of the following kits:

PART NO.	DESCRIPTION
87166-99	TLE Sidecar Connection Kit. This kit provides the mechanical components required to attach the TLE/TLE-Ultra Sidecar to any 1999 and later FLT family motorcycle.
87142-83A	Steering Damper Mounting Kit. This kit contains a mounting bracket and hardware for mounting the steering damper.

See Service Parts illustration for kit contents.

NOTE

A Sidecar Service Manual is available from your Harley-Davidson dealer. Use this instruction sheet in conjunction with the Sidecar Service Manual to properly install this kit.

WARNING

The rider's safety depends on this kit being installed correctly. Harley-Davidson recommends that this kit be installed only by a qualified Harley-Davidson dealer. Failure to comply could result in death or serious injury.

TLE Sidecar Connection Kit, Part No.

87166-99, Installation

Pre-installation Modifications

Before installing this connection kit the following modifications must be made:

- a. Stock clutch cable must be removed and replaced with longer clutch cable in kit. (Cable routing is changed).
- b. Rear master cylinder must be changed to use a remote reservoir (similar to 1998 configuration).
- c. On motorcycles equipped with oil pressure gauges, the oil pressure sender must be reoriented (downward) with a 90° elbow.

STOCK CLUTCH CABLE REMOVAL

1. Refer to FLT Service Manual and remove right rider footboard and entire exhaust system.
2. Follow FLT Service Manual procedures and remove stock clutch cable.

CLUTCH CABLE INSTALLATION

Refer to FLT Service manual and follow instructions to connect clutch cable to clutch hand lever.

1. Follow the specific instructions given for FLHT/C/U to route cable through fairing. See Figure 1. Route cable down along left downtube. See Figures 2 through 5. The cable continues down behind regulator and diagonally under crankcase to clutch release cover on right side of transmission.

NOTE

The final positioning and attachment of the clutch cable will be made after sidecar mounts have been installed. The clutch cable will be secured with a clamp at the lower front mount and at a t-stud clip at the left side of the front engine bracket behind the regulator.

2. On FLHR/CI models capture the cable in a clamp at the left upper passing lamp bolt. On FLTR/I capture the cable in a clamp at the left upper bolt securing the speedometer and tachometer housing to the upper fork bracket. These locations are identical with stock cable routing.
3. See Figures 2 through 5. From the clamp at the lower front mount to clutch release cover, the clutch cable routing is identical on all models. The clutch cable is routed behind the front alignment stabilizer, behind regulator and diagonally under crankcase to clutch release cover on right side of transmission.
4. Follow FLT Service Manual procedures and install clutch cable fitting into clutch release cover.
5. See Figure 4, View A. If clutch cable is touching brake line, do the following:
6. See Figure 4, View B. Open both cable clips and gently move brake line out of clips and down along inside of lower frame tube.
7. Check that clutch cable does not touch brake line. Install two cable straps, Part No. 10006, under wiring harness and around frame tube and brake line to secure brake line in new location.

NOTE

Clutch cable adjustment will be performed after sidecar mounts have been installed.

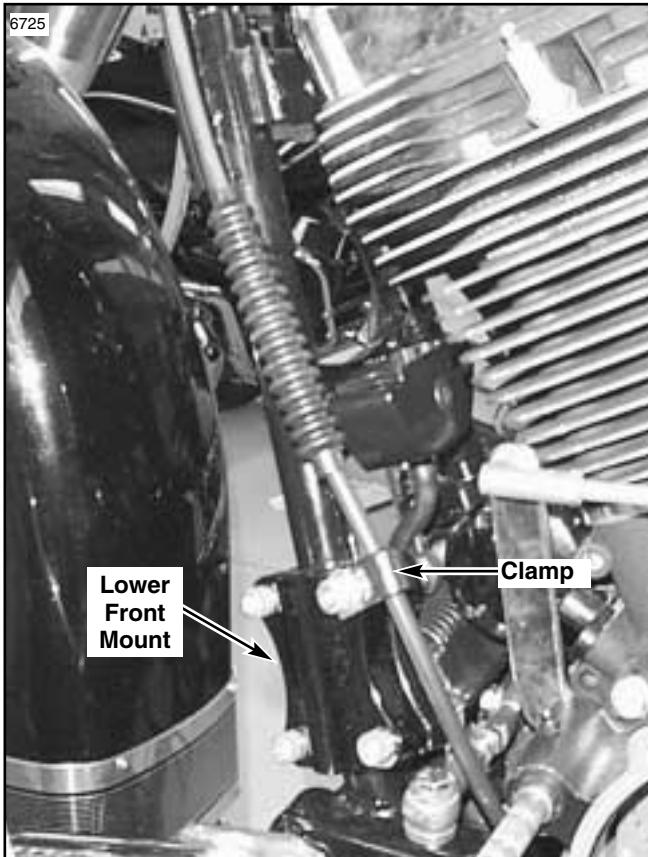


Figure 1. Clutch Cable Routing



Figure 2. Clutch Cable Routing (Behind Regulator)

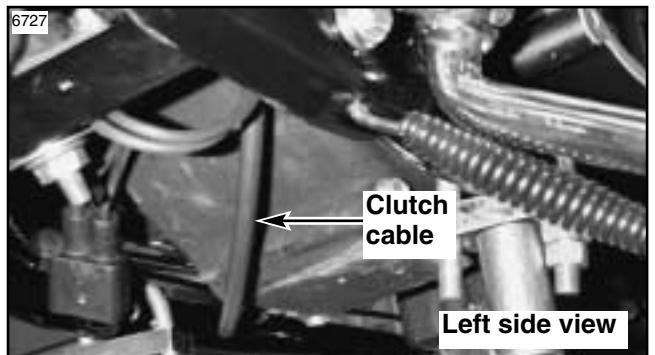
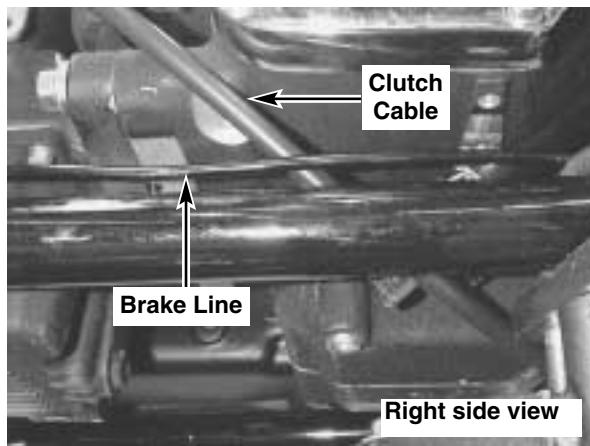
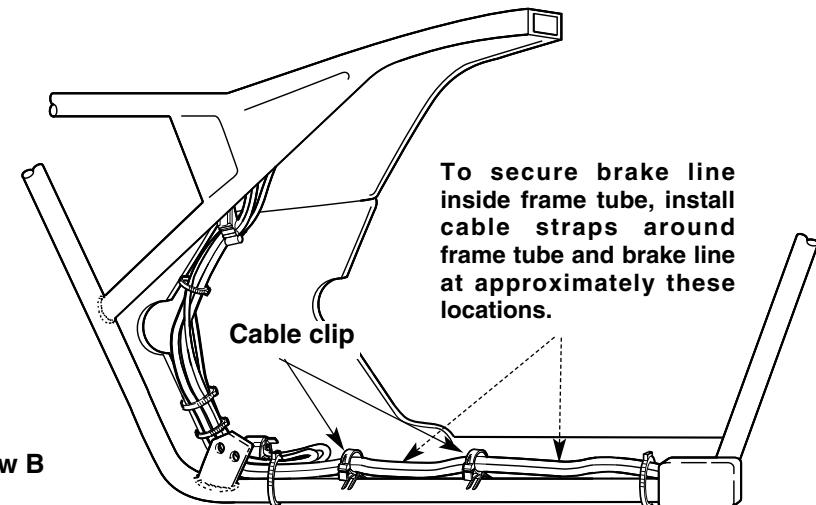


Figure 3. Clutch Cable Routing (Under Crankcase)

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View A



View B

Figure 4. Relocating Brake Line To Prevent Interference with Clutch cable



Figure 5. Clutch Cable At Transmission

REAR MASTER CYLINDER MODIFICATION

1. Refer to FLT Service Manual. Remove rear brake pedal/master cylinder assembly.

NOTE

Do not remove master cylinder from rear brake pedal. The stock reservoir can be removed without any further disassembly.

2. Thoroughly clean exterior of master cylinder assembly with denatured alcohol.
3. Gently lift rubber boot from groove in plastic reservoir and slide boot off reservoir.
4. Grip boot end of reservoir with finger tips and with thumbs push on threaded end of cartridge body to remove reservoir. Use hand pressure only. Exercise care to keep cartridge body free of dirt and grease.
5. Carefully remove two O-rings from outside of cartridge body. Exercise caution to avoid scratching O-ring grooves.
7. Lubricate new O-rings (supplied with reservoir adapter) with D.O.T. 5 SILICONE HYDRAULIC BRAKE FLUID and carefully install in grooves on cartridge body.
8. Wipe bore of new reservoir adapter with D.O.T. 5 SILICONE HYDRAULIC BRAKE FLUID.
9. Insert cartridge body into reservoir adapter indexing tab on adapter in slot on threaded end of cartridge. Use hand pressure only. Cartridge body is fully installed when adapter contacts large retaining ring.
10. Slide dust boot as necessary to seat lip in groove of reservoir adapter.
11. Set pedal/master cylinder assembly aside, it will be installed later.

INSTALLING REMOTE RESERVOIR

1. See Figure 6. Attach reservoir to reservoir bracket as shown.
2. See Figure 7. Install remote reservoir to engine side of frame crossmember as shown.

RELOCATING OIL PRESSURE SENDER

NOTE

If motorcycle is not equipped with oil pressure gauge go to "Installing Upper Mount".

1. See Figure 8. Raise latch on connector and disconnect leads from oil pressure sender.
2. Remove oil pressure sender using a 1-1/16 in. open end wrench.
3. Coat male threads of 90° elbow with **PIPE SEALANT WITH TEFLON** and install with female opening pointing downward as shown.

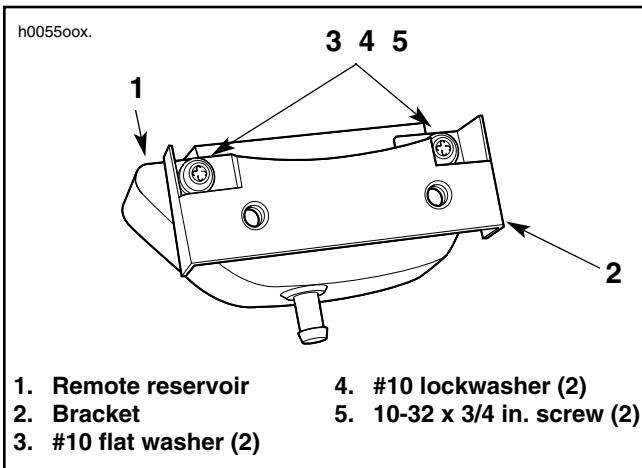


Figure 6. Remote Reservoir and Bracket

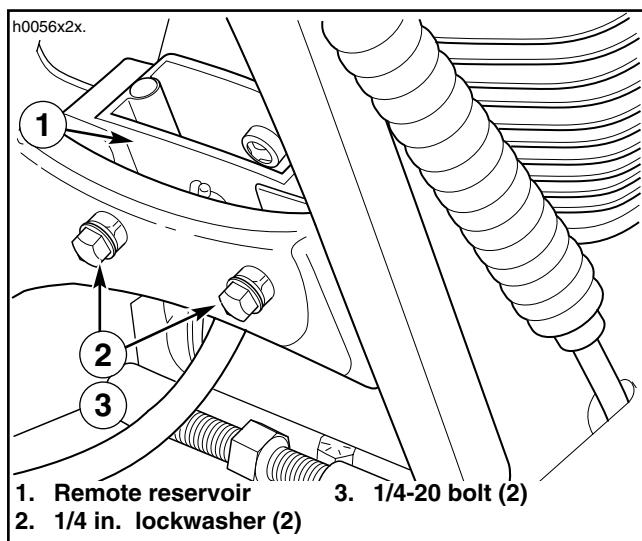


Figure 7. Remote Reservoir and Bracket Installed

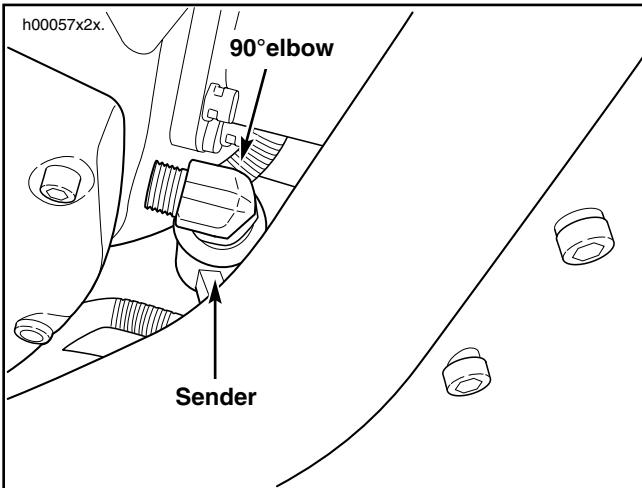


Figure 8. Relocating Oil Pressure Sender

4. Coat threads of oil pressure sender with **PIPE SEALANT WITH TEFLON**, install oil pressure sender into elbow and tighten with a 1-1/16 in. open end wrench.
5. Install connector on oil pressure sender.

Installing Upper Mount

1. See Service Parts illustration. Position the rear half of the upper clamp (7) on the rear of the frame downtubes. The mount is self-aligning. Mount is correctly located when the grooves in the mount mate fully with frame tubes.
2. Place the front upper clamp (6) in position and secure with bolt (12) and lockwasher (13). Tighten bolt to 50-60 ft-lbs.

Installing Front Lower Mount

1. See Figure 9, and Service Parts illustration. Thread the stabilizer adjuster (27) into the right and left stabilizers (3 and 4). The stabilizers are marked with an "R" and "L" to indicate right and left respectively. The right stabilizer has right hand threads - the left stabilizer, left hand threads.
2. Place the stabilizer assembly between the frame downtubes from the backside and position the assembly so 1/16 inch clearance exists between assembly bottom and regulator.
3. Tighten the stabilizer adjuster just enough to hold the assembly in place.
4. See Service Parts illustration. Position the lower front mount (2) on the right frame downtube opposite the right stabilizer and insert four bolts (15) thru mount and stabilizer.
5. See Figure 1 and Service Parts illustration. Install backing plate (5) on left stabilizer with four bolts (54). Install clutch cable clamp (48) on clutch cable and secure with upper rear bolt. Tighten bolts finger tight.

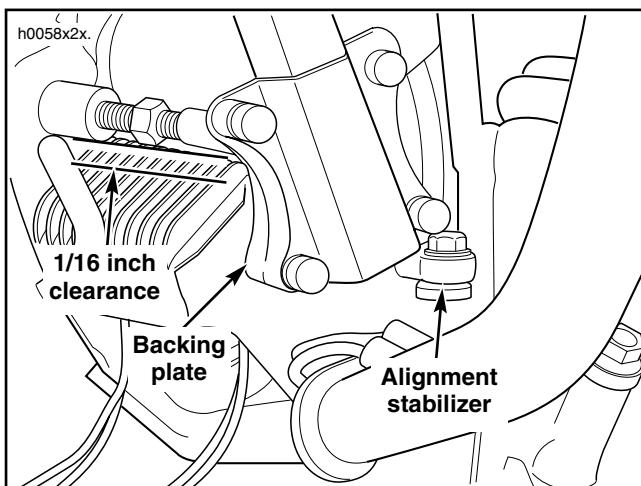


Figure 9. Lower Front Mount

6. See Figure 9. Check that clearance between lower front mount assembly and regulator is 1/16 inch and that clearance exists between backing plate and front alignment stabilizer.

7. Move entire front mount assembly up if there is interference with front alignment stabilizer or less than 1/16 inch clearance at voltage regulator.

CAUTION

Do not over-tighten stabilizer adjuster or frame down tubes will be forced apart.

8. With a wrench, turn the stabilizer adjuster so the stabilizers press, not pull, firmly against the frame down tubes.
9. Tighten the four bolts in each stabilizer to 35-40 ft-lbs (47.5-54.2).

Installing Rear Mount

1. If not already removed, remove right side cover and both saddlebags.
2. Loosen and remove screw that attaches P-clamp and rear brake line to right passenger footrest bracket. Retain screw and P-clamp to attach brake line to rear mount. Remove the two bolts and lockwashers securing the right passenger footrest bracket and remove the footrest and bracket.
3. See Service Parts illustration. Position the rear mount (1) over the three mounting holes and be certain roll pin enters the alignment hole in the rubber mount. Check the left pivot shaft rubber mount to be sure it is in place.
4. Take one of the lockwashers removed with right footrest bracket and place over bolt (21). Insert bolt through passenger footboard mount, through upper hole in rear mount (1) and thread into upper tapped hole in frame. Take one of the bolts and the remaining lockwasher removed with right footrest bracket and place the washer over the bolt. Insert the bolt through the bottom front hole in rear mount and thread into lower hole in frame. Tighten both bolts to approximately 20 ft-lbs.
5. Use the shim washers (23 through 26 as needed) and "shim" the gap between the mounting block and rear mount.
6. Insert bolt (20) with lockwasher (22) through mount (1) and block. Tighten the three mounting bolts to 34-42 ft-lbs.
7. See Figure 10. Install P-clamp (removed in step 2) on rear brake line and secure with stock screw.

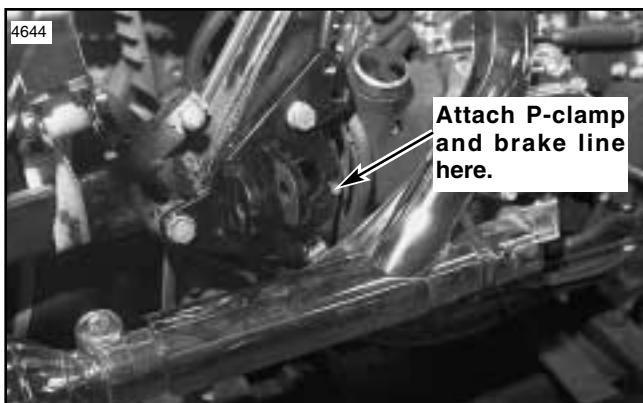


Figure 10. Rear Mount

CAUTION

Do not raise lower front mount anymore than needed to obtain 1/16 inch clearance at regulator. Raising front mount higher will cause difficulty servicing oil filter.

Attaching Steering Damper Bracket

NOTE

The 2001 FLT models no longer have air deflectors on the lower triple clamp. Go to Step 2 and install bracket with 3 screws, (P/N 3892), removed from lower triple clamp and 3 washers (P/N 6703) contained in steering damper kit.

1. On pre-2001 models, remove the two bolts and washers securing the air deflector to the lower triple clamp under front forks and remove the air deflector. Retain air deflector to be installed when sidecar is not attached.
2. Install bracket using the two bolts removed in Step 1 and one screw, (P/N 3892) and washer (P/N 6703) obtained from H-D dealer. Tighten bolts to 96-120 **in-lbs** (10.8-13.6 Nm).
3. Refer to the Sidecar Service Manual for instructions for attaching and adjusting the steering damper.

Installing Tee in Frame Bracket

1. See Figure 11. Remove stoplamp switch (1) from fitting (3) at frame bracket.
2. Coat male threads of tee (2) with Loctite Pipe Sealant with Teflon. Thread tee (2) into fitting (3) and tighten so that right angle opening is vertical.
3. Coat threads of stoplight switch (1) with Loctite Pipe Sealant with Teflon. Thread switch into end of tee (2).
4. If sidecar is not being attached, install plug (4) in the right angle opening.

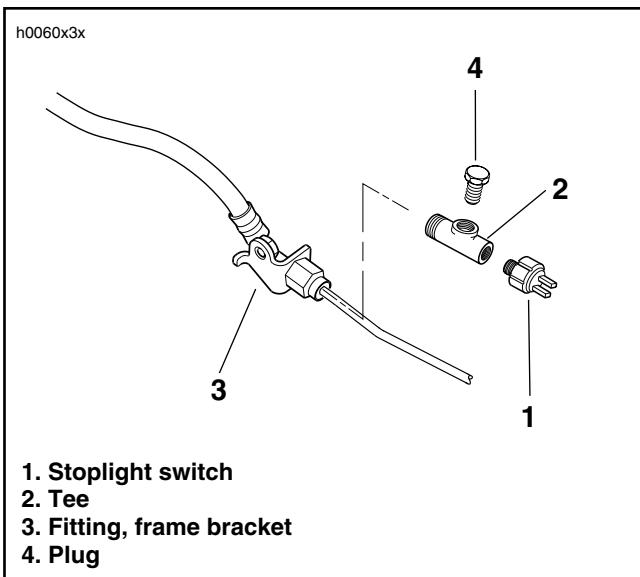


Figure 11. Brake Line Connection

Clutch Cable Placement and Adjustment

1. See Figure 12. Remove stock t-stud clip that secures stator wires on left end of front engine bracket behind voltage regulator.
2. Capture stator wires and clutch cable in larger clip (item 42 in Service Parts illustration) and install clip on t-stud.
3. Refer to FLT Service Manual and perform the Clutch Adjustment procedure.

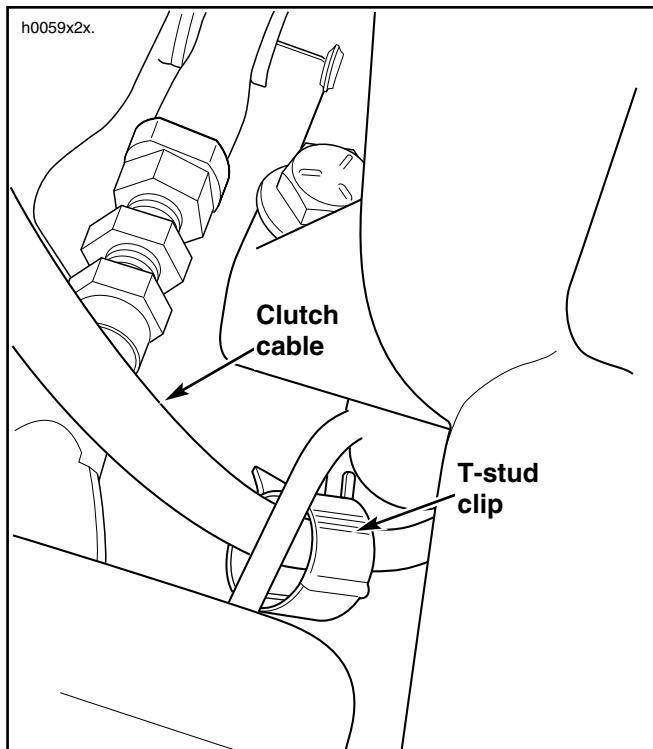


Figure 12. Clutch Cable Attachment (Behind Regulator)

Installing Pedal/Master Cylinder Assembly

1. Refer to FLT Service Manual and follow instructions to install pedal/master cylinder assembly.
2. See Figure 13. Route hose (1) from reservoir down behind lower right front mount (2) to master cylinder and secure with hose clamps.
3. Secure hose (1) to upper bolt in lower right front mount (2) by passing a cable strap (3) between the mount halves, around the bolt and hose as shown in Figure 13.
4. Refer to FLT Service Manual, fill reservoir with **D.O.T. 5 SILICONE HYDRAULIC BRAKE FLUID** and bleed rear brake system.
5. Install reservoir gasket, cover and screws.

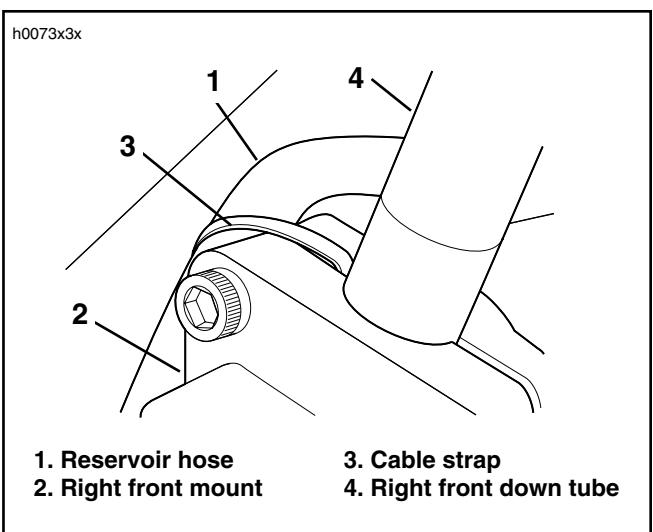


Figure 13. Securing Brake Reservoir Hose

Installing Exhaust System/Items Removed To Allow Connection Kit Installation

Refer to FLT Service Manual and install exhaust system. Also install side cover, saddlebags and other parts/assemblies removed during kit installation.

NOTE

Sidecar attaching hardware, Items 16, 17, 18, 19, 30, 37, 38, 39, and 40, contained in this Kit must be installed while attaching the sidecar to the motorcycle. See Sidecar Service Manual for installation procedures for the above items.

Installing Right Passenger Footboard

Fasten the footboard to the rear mount assembly (item 1, Service Parts illustration) using the footboard attaching hardware. Adjust footboard to suit the passenger and install and tighten bolt to 20 ft-lbs.

Steering Damper Mounting Kit, Part No. 87142-83A

The contents of this kit are listed as item numbers 32 through 40 on the Service Parts page. To install the steering damper bracket, follow the procedure "Attaching Steering Damper Bracket" above. Installation of the remaining parts and adjustment is covered in the Sidecar Service Manual.

NOTE

The steering damper (28) and rod end (33) have M10 x1.5 metric threads.

TLE Ultra Sidecar

The TLE-ULTRA SIDECAR utilizes the same attaching kit as the TLE sidecar. There are, however, additional wiring harnesses that need to be installed to connect the sidecar light harness and the radio. See instructions in the Sidecar Service Manual.

Wiring Harness Connections

NOTE

The sidecar harness is included with the sidecar and is not part of the connection kit.

See Sidecar Service Manual for wiring harness connection procedures.



Service Parts

Part No. 87166-99

Date 11-00

TLE Sidecar Attaching Kits

Item	Description	Qty.*	Part No.	Item	Description	Qty.*	Part No.
1	Rear mount		87114-93	32	Washer, 1/4 in. ID	3	6703
2	Lower front mount, right side		87122-83A		Steering damper mounting kit		Not sold
3	Stabilizer, right side		87148-92		<i>The Steering Damper Mounting Kit</i>		
4	Stabilizer, left side		87137-92		<i>contains items 32 through 40:</i>		
5	Lower front mount, left side		87123-83	33	Rod end		87144-83
6	Front upper clamp kit (includes item 10)		87131-83C	34	Bracket		87143-83
7	Rear upper clamp		87132-92	35	Spacer	2	59938-72
8	Brake line tee		87113-83	36	Bolt, 3/8-16 x 1 -3/4 in.	2	4720W
9	Plug, 3/8-24		42311-58	37	Locknut, 3/8-24	2	7601
10	Bolt, 1/2-13 x 2-1/4 in.		3902	38	Washer, 3/8 in. ID	3	6701
11	Cotter pin		559	39	Washer, 13/32 x 1 1/32 x 1/8 in.	3	6519
12	Bolt, 1/2-13 x 1-3/4 in.		4052	40	Bolt, 3/8-16 x 2-3/4 in.		4420
13	Lockwasher, 1/2 in. ID		7068	41	Hose clamp	2	10038A
14	Washer, 17/32 x 1-1/2 x 9/64 in.		6723	42	Clip		10108
15	Bolt, 3/8-16 x 1-3/4 in.	4	4357	43	#10-32 x 3/4 in. Torx screw	2	2576
16	Bolt, 3/4-10		4151	44	Elbow 90°		26337-99
17	Bolt, 3/4-10 x 2-3/4 in.		4045	45	Screw, 1/4-20 x 1/2 in.	4	3728
18	Nut, 3/4		7598	46	Clutch control cable (not shown)		38649-98
19	Lockwasher, 3/4		7043	47	Reservoir, brake fluid		41804-84A
20	Bolt, 7/16-14 x 1-1/4 in.		3782	48	Clamp		42327-70
21	Bolt, 7/16-14 x 2 in.		3764	49	Brake reservoir bracket		42354-99
22	Lockwasher, 7/16 in. ID		7039	50	Hose, brake reservoir to master cyl.		42370-97
23	Washer, shim, 0.031 in. thick	2	6963	51	Gasket reservoir cover		42455-80
24	Washer, shim, 0.015 in. thick	2	6962	52	Kit, brake reservoir adapter		42457-95
25	Washer, shim, 0.007 in. thick	2	6961	53	#10-32 x 5/8 in. screw, hex socket	2	42534-90
26	Washer, shim, 0.004 in. thick	2	6960	54	Bolt, 3/8-16 x 1-1/2 in.	4	4356
27	Stabilizer adjuster		87156-83	55	Cover, reservoir		45057-82
28	Steering damper		87141-83	56	Washer, #10	2	6716
29	Washer, 1/2 x 1-1/16 x 3/32 in.		6718	57	Washer, 1/4 in ID	2	7036
30	Locknut, 1/2-13		7843	58	Lockwasher, #10	2	7069
31	Cable straps (not shown)	2	10006	59	Nuts, 1/4-20	4	7686
				60	Washer, 3/8 in. ID		6701
				61	Clamp (not shown)		10036
				62	Plate, lock tab (not shown)		35061-99
				63	Screw, hex cap (not shown)		3949
				64	Front upper clamp (not shown)		87131-99

* If quantity is not shown, kit contains one (1).

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Service Parts

Part No. 87166-99

Date 11-00

TLE Sidecar Attaching Kits

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